

NAVAL WAR COLLEGE
Newport, RI

Making Fires Joint

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy

Signature: _____

4 February 2002

Signature: _____

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Report Documentation Page		
Report Date 04 Feb 2002	Report Type N/A	Dates Covered (from... to) -
Title and Subtitle Making Fires Joint	Contract Number	
	Grant Number	
	Program Element Number	
Author(s)	Project Number	
	Task Number	
	Work Unit Number	
Performing Organization Name(s) and Address(es) Joint Military Operations Department Naval War College 686 Cushing Road Newport, RI 02841-1207	Performing Organization Report Number	
Sponsoring/Monitoring Agency Name(s) and Address(es)	Sponsor/Monitor's Acronym(s)	
	Sponsor/Monitor's Report Number(s)	
Distribution/Availability Statement Approved for public release, distribution unlimited		
Supplementary Notes The original document contains color images.		
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Subject Terms		
Report Classification unclassified	Classification of this page unclassified	

Classification of Abstract unclassified	Limitation of Abstract UU
Number of Pages 35	

REPORT DOCUMENTATION PAGE

1. Report Security Classification: UNCLASSIFIED			
2. Security Classification Authority:			
3. Declassification/Downgrading Schedule:			
4. Distribution/Availability of Report: DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.			
5. Name of Performing Organization: JOINT MILITARY OPERATIONS DEPARTMENT			
6. Office Symbol: C		7. Address: NAVAL WAR COLLEGE 686 CUSHING ROAD NEWPORT, RI 02841-1207	
8. Title (Include Security Classification): Making Fires Joint			
9. Personal Authors: Timothy M. Parker, Major, USMC			
10. Type of Report: FINAL		11. Date of Report: 4 February 2002	
12. Page Count: 36 12A Paper Advisor (if any): Michael R. Critz, Capt, USN			
13. Supplementary Notation: A paper submitted to the Faculty of the NWC in partial satisfaction of the requirements of the JMO Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.			
14. Ten key words that relate to your paper: <div style="display: flex; justify-content: space-between;"> <div> Fires Fire Support Weaponneering </div> <div> Joint Force Fires Coordinator (JFFC) Joint Targeting Joint Fires Element </div> <div> Joint Targeting Coordination Board (JTCB) Joint Forces Air Component Commander (JFACC) Fire Support Coordination Line (FSCL) Joint Integrated Prioritized Target List (JIPTL) </div> </div>			
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16. Distribution / Availability of Abstract:	Unclassified X	Same As Rpt	DTIC Users
17. Abstract Security Classification: UNCLASSIFIED			
18. Name of Responsible Individual: CHAIRMAN, JOINT MILITARY OPERATIONS DEPARTMENT			
19. Telephone: 841-3556		20. Office Symbol: C	

Security Classification of This Page Unclassified

Joint Fires?

The current doctrine and approach in which we employ fires is clearly not “joint”. There is no single entity existing in joint doctrine to plan, coordinate, and execute the Joint Force Commander's (JFC) Concept for fighting with fires. At least two principle persons/agencies have planning and execution responsibility for consolidating the planning and execution of fires: the Joint Forces Air Component Commander (JFACC) and the Joint Fires Element (JFE). Compounding the problem, the JFE is currently an optional staff section of the J-3.¹ The JFACC is responsible for "making recommendations on the proper employment of assigned, attached, and/or made available for tasking air forces; planning and coordinating air operations; or accomplishing such operational missions as may be assigned".² The JFE "provides recommendations to the J-3 to accomplish fires planning and synchronization".³ Additionally, the joint force produces an Operation Plan Joint Target List (OPLAN JTL) Annex, which “serves as an initial list of campaign targets. The JTL is the master target list that supports the JFC’s objectives, guidance, intent, and courses of action.”⁴ However, joint doctrine also allows for the use of a Joint Integrated Prioritized Target List (JIPTL), which is a “JFC level product usually produced by the joint force air component commander (JFACC).”⁵ Since Operation Desert Storm, some JFC’s have habitually migrated most targeting responsibilities to include convening or controlling the Joint Targeting Coordination Board (JTCB) “a group formed by the joint force commander to accomplish broad targeting oversight functions that may include, but are not limited to coordinating targeting information, providing targeting guidance and priorities, and preparing and/or refining joint target lists”⁶ to the JFACC.⁷ So who’s in charge of the JFC’s fires?

The current "split" in doctrine is a highly volatile rift because air advocates view any change in the current practice as an attempt to reduce the power of the JFACC, and ground commanders continue to feel they have little input into the targeting process vital to their shaping operations. This situation fosters a lack of unity in planning, effort, and command concerning fires.

Only by integrating the synergistic effects of combined arms will the joint force of the future succeed. A key step toward integrating fires in this decisive mode is to establish a Joint Force Fires Coordinator (JFFC) and Joint Force Fires Coordination Center (JFFCC) as a mandatory special staff section on all Joint Force Staffs. The JFFC would have the primary responsibility for articulating the JFC's Concept of Fires in execution by conducting targeting, weaponeering, planning, synchronizing, and coordination of fires with maneuver within the JFC's entire Joint Operations Area (JOA). It would be the responsibility of the JFFC to ensure that all targets and fires regardless of their type, distance, or level of importance are engaged in a synergistic manner in concert with the JFC's overall concept of operations. This would shift some of responsibilities currently held by many JFACC, but in no way impinge on his chief role as Air Component Commander, responsible for prosecution of the air portion of the JFC's overall campaign. Since the inception of joint doctrine, our military campaigns have been fought against second and third rate powers. Should we enter into the next conflict with a nation whose capabilities and determination more closely mirror our own, this rift could prove fatal. The current doctrine for fires creates a gap between our forces, one we must correct before an enemy learns to exploit it.

Background

The Goldwater-Nichols Act of 1986 imposed “jointness” upon the armed services of the United States. The first large scale test of American Joint Military Operations and the accompanying doctrine that supported it was the Gulf War of 1990-91. This conflict highlighted the “growing pains” and disconnects inherent in joint doctrine and employment, and no issue was more contentious than the issue of “fires”. At the onset of the war, most ground proponents grouped the preponderance of air assets (except for cargo assets) under the category of fires. Air proponents saw aviation as a completely separate element that would be constrained if employed in such a manner, and sought to employ air assets in a centralized manner to maximize its effect. This rift was confirmed in the targeting methodology. The chief agent for targeting throughout the Gulf War was the Joint Forces Air Component Commander (JFACC). Utilizing a Targeting Cell comprised chiefly of air officers (“the Black Hole”), the targeteers focused chiefly on strategic and deep targeting, linking the process to the 72-hour Air Tasking Order (ATO) cycle. Numerous complaints emerged concerning this process, most notably that the process was not joint. This process effectively shut out the other services from their targeting concerns, a situation only rectified by the intervention of the Deputy CINC. More importantly, this process focused almost solely on air power as the means to achieve the desired ends, while virtually ignoring surface and sea based platforms.⁸

In the years subsequent to the Gulf War two conflicts ensued; the first of these was a doctrinal war. Joint doctrine separates the operational functions into Command and Control, Intelligence, Movement and Maneuver, Logistics, Protection, and Fires. The last category, Fires, has emerged as the most divisive and contentious function to define

and integrate within the joint force. It took nine years to even agree upon the definition of fires, chiefly because the "USAF opposed the project from the onset, citing objections to terminology and the basic need for "fires" doctrine".⁹ US Army proponentcy of a JFFC concept was seen by the Air Force as an Army attempt to wrest away a large part of the Joint Force Air Component Commander's (JFACC) targeting and planning responsibilities. A Joint Warfighting Center (JWFC) study on the viability of a JFFC concept was released in 1997. It clearly showed the disconnect between air operations and all other forms of fires on the battlefield. Moreover, it showed that, "the JFC needed a JFFC to be the impartial arbiter for joint fires, manage scarce resources, ensure the commander's guidance is being followed and intent accomplished, maintain a focus on what to preserve or destroy, deconflict lethal and nonlethal fires, champion JFC fires needs, and help the JFC maintain situational awareness."¹⁰ The study also recognized that "the JFACC has some limitations regarding control of all joint fires resources (e.g., TLAM, ATACMS) and awareness of special operations and nonlethal strategies, thus an opportunity may exist to not consider all joint fires aspects during development of the air plan."¹¹ This subdued statement goes to the heart of the current problem, that

"the JFACC is used to consolidate, review, deconflict, and prioritize nominated targets. The outcome of the target development phase is a Joint Integrated Prioritized Target List (JIPTL) which the JFACC provides to the J-3/ JFFC for review, and briefs to the JTCB for JFC approval. Some commands operate a JTCB under the JFACC, and, in those cases, the JTCB is a "hands-on" organization in developing and refining the target list. The JFACC primarily conducts weaponeering and force application actions."¹²

The study correctly indicates that the targeting process has become nearly an air-pure event, with little consideration for the employment of other platforms, something establishment of a JFFC would obviate.

The JWFC Study concluded that a JFFC was warranted and that a "JFFC should yield improved joint operations efficiency through synchronization of joint fires with other

elements such as maneuver, IO, special operations, and logistics” and should serve as "principal staff advisor to the JFC responsible for the coordination, integration, and synchronization of joint fires with other major elements of the campaign/operation such as maneuver, information operations, special operations, and logistics."¹³ However, Joint Publication 3-09, *Doctrine for Joint Fire Support*, published a year later, did not mandate the establishment of a JFFC. The JFFC was re-named the Joint Fires Element, an optional special staff section of the J-3.¹⁴ The problem was a Joint Force Fires Coordinator fit well with ground warfare doctrine, but airmen saw it as an unnecessary complication of the situation and an attempt to weaken the JFACC's authority.¹⁵ We remain at a joint doctrinal impasse.

The second part of this fires conflict was the military operations conducted by US forces in the period following Operation Desert Storm. These operations were of two basic types, conflicts involving land, sea, and air forces (e.g., Haiti, Somalia) and conflicts involving chiefly air forces (e.g., Bosnia, Kosovo). During the former operations, joint forces began to actively use a JFFC, and were more successful at integrating fires with maneuver. After Action Comments from Operation Uphold Democracy (Haiti) even recommended that "the JFFC needed to manage the JIPTL development to ensure overall targeting supports the CJTF."¹⁶ It was clear that in operations that were not "air-pure", one entity was required to integrate all fires for the JFC. Some maintain that the JFACC already fulfills the function of articulating the JFC's Concept for Fires, particularly in air dominated operations, but an air-pure operation, like Operation Allied Force (Kosovo), demonstrated this was not the case.

The CINCEUR, Gen Clark, articulated his perceived enemy center of gravity as follows: "“we had to hit, hurt, and inhibit the Serb forces in Kosovo because Serbian actions there were the *casus belli* itself... Of course, we wanted to strike hard at the strategic and infrastructure targets throughout the Federal Republic of Yugoslavia, but the attacks on these fixed targets were relatively easy compared to gripping the tactical forces themselves.”¹⁷ He believed that the "best way to stop ethnic cleansing was to destroy the instruments of ethnic cleansing directly."¹⁸ However, throughout the conflict, the JFACC, Gen Short, conducted targeting and weaponeering according to what he perceived as the enemy center of gravity. Short’s opinion was that, "the massive and laborious tank plinking effort in Kosovo was in many ways a waste of airpower since, in his opinion, it did little to achieve NATO's stated goals. Only when NATO shifted its emphasis to attacking pivotal targets in and around Belgrade, the capital of Yugoslavia, did it finally compel Serb President Slobodan Milosevic to accept terms."¹⁹ Unfortunately, this assessment does not correlate to the center of gravity articulated to him by the CINC. It is evident that end state and the means to that end articulated by the JFC were not shared by the JFACC, who prosecuted the war according to his service philosophy vice his CINC’s intent. Perhaps this is a leadership problem with the JFC, and not the JFACC, or perhaps the doctrine has been built from the wrong lessons learned and requires a new solution.

At the time of writing we are prosecuting our first phase of the War on Terrorism in Afghanistan. Though it may be months to years to glean the proper lessons from this conflict, what has become apparent is that the success of the “air campaign” has largely been a function of integrating its effects with maneuver forces on the ground.²⁰ Perhaps

we've begun to properly apply our lessons learned, but need to apply one of the most glaring lessons: component commanders make poor fires coordinators.

The JFACC: Warfighter or Joint Fires Coordinator?

Joint Publication 3-09 defines the JFC's Concept of Fires as “how tactical, operational, and strategic fires will be integrated and synchronized.”²¹ The synergistic effect created by the coordinated actions and effects of fire and maneuver is the goal. Current joint doctrine and practice places the responsibility of articulating this concept into execution on the JFACC, but is the JFACC the best person to do this? The JFACC, more often than not, will be geographically separated from the JFC and the J-3, the latter being tasked with coalescing all aspects of land, air, and sea together to meet the JFC's concept of operations. Additionally, the JFACC is primarily focused on strategic targets which are more easily prosecuted by airpower, a doctrine encapsulated in service doctrine in Air Force Manual 1-1 and the JFACC Primer. Likewise, operations during and after Desert Storm indicate an inability or unwillingness of the JFACC to carry out these responsibilities.

During Operation Desert Storm, the “Black Hole” targeting cell's targeting methodology, led many ground commanders to complain they had little input into the JIPTL, causing the Central Command Deputy Commander (CENTCOM DCINC) to weigh-in on the ground forces side. However, even then “the Air Force adhered only to the letter, not the spirit of the DCINC's directive to begin attacking more land force nominated interdiction targets...the Air Force began demanding that all land force operational level interdiction target submissions be accurate within 100 meters. This requirement proved practically impossible to meet, and attack of land force nominated

interdiction targets decreased as a result”.²² This was no surprise as it is virtually impossible to validate the location of mobile targets with that level of accuracy 72 hours in advance for inclusion into the ATO.

At the time, the DCINC felt “some of the air planners were trying hard to win the war without a ground attack and insufficient attention was being paid to the close battlefield preparation in support of the ground offensive. As a result, the DCINC became involved with a portion of CENTCOM’s targeting process during the air campaign’s battlefield preparation phase.”²³

In addition to fires prioritization difficulties, numerous disagreements regarding the employment of the Fire Support Coordination Line (FSCL) led to gaps in joint force responsibilities. Ground commanders using the battlefield framework of deep, close, and rear operations, viewed the FSCL as a permissive fire support coordination measure (because it allowed the freedom to target beyond the FSCL without coordination), to be extended as far as the ability to influence the Area of Responsibility using organic long-range attack systems.²⁴ Air commanders saw the extension of the FSCL as negating the inherent capabilities of airpower, and viewed the FSCL as a restrictive fire support coordination measure and a boundary between the JFLCC and the JFACC, because it created a requirement to clear fires in a ground force controlled area. The JFACC saw the area beyond the FSCL as a realm where a “single commander must have the authority to integrate these weapons at the operational level.”²⁵ The JFACC, LtGen Horner, went so far as to state, “If it’s inside the Fire Support Coordination Line, don’t bother to tell me. If it’s not, put it in the ATO”.²⁶

On 24 February 1991, the VII Corps extended the FSCL 150 miles. The JFACC forbade any mission within the FSCL not positively controlled by a Forward Air Controller. In an attempt to delineate areas of responsibility and prevent fratricide, the joint force had unintentionally created a seam in the application of operational fires that the Iraqi military unwittingly exploited.²⁷ Operational commanders allowed the bulk of the Republican Guard Units (the designated enemy center of gravity) to escape, because “the Army and Air Force reverted to physically dividing the battlefield rather than integrating it.”²⁸ Interpretations such as these “purposely divide the battlefield between tactical and operational levels, creating an exploitable seam, based on an obsolete land and air force functional capability paradigm”.²⁹ The entity responsible for the JFC’s fires cannot be focused on only one aspect of the fires fight. This issue was also brought to light during the JWFC JFFC Study which stated, “the JFFC should develop the JIPTL instead of the JFACC since it did not seem to conform to JFC priorities”³⁰ or intent. This was the case as in the previous example of Operation Allied Force. The JFACC did not agree with his CINC's assessment of the enemy COG, and often placated the CINC by "trying to put enough weighted effort against the 3rd Army to satisfy the SACEUR's guidance, 'while I used the rest of my assets to attack that target set that I genuinely believed to be compelling.’”³¹ It has become an unfortunate fact that the focus naturally shifts to targets that can be attacked by air assets, chiefly because of the air component’s “unique ability to strike operational and strategic targets encouraged them to give more value to these targets than tactical ones.”³²

The air focus of the JFACC is logical considering his position as the ACC, but it leads to an overemphasis on targets that can be prosecuted by air, and makes for a poor joint

targeteer. Control of targeting should not be an issue for a component commander, except for the fact that "targeting is a command function to airmen--it is the principle way air commanders orient their offensive operations to accomplish assigned objectives."³³ This has been the primary "bone of contention" regarding the responsibilities of a JFFC vs. a JFACC. It was also the chief reason the Army-Air Force Warfighter Conference concluded that the term JFFC must be changed to ensure it did not denote command functions.³⁴ The JFACC is a component commander, and as such, he receives tasks from the JFC that must be carried out in concert with the other component commanders to achieve to desired effect for the JFC. No other component commander generates all their own tasks, so why must the JFACC generate the JIPTL to carry out his mission? Timely production of a JIPTL at the JFHQ, with input provided by JFACC representatives and other component representatives, will not impinge upon the JFACC's ability to orient his forces, and may even afford him more time to do so. The JFACC is "limited by time or position, and cannot fully synergize the joint fires piece and other pertinent operations such as maneuver, information operations, special operations, and logistics"³⁵, and should not be the primary choice to coordinate joint fires.

In addition to these considerations, technological advances have extended the range and accuracy of both air and ground forces (see Appendix A). Air forces can often safely engage targets within hundreds of meters of friendlies without significant risks of fratricide. Ground and naval forces

"both possess long range, precision guided missile systems. The tactical land attack missile (TLAMS) can strike against high priority targets to ranges of 1000 nautical miles with pinpoint accuracy. Similarly, the Army Tactical Missile System (ATACMS) can deliver payloads such as the brilliant anti-tank (BAT) submunition to ranges exceeding 300 kilometers with sufficient accuracy to ensure target acquisition by the BAT. In the near future, the Navy will provide operational fires in the littorals with naval gunfire support systems firing the Extended Range Guided Munition (ERGM). This 155mm projectile will either be a laser rider or GPS controlled round with a maximum range in excess of 60 kilometers."³⁶

This extension of range and accuracy demands “the synchronized employment of complementary service assets by fostering a joint environment” that does not view “new capabilities as an encroachment on historical roles and missions”.³⁷ As information and fires technologies improve and expand the operator’s ability to accurately see the battlespace and the concept of the linear battlefield wanes, many fire support coordination measures will become irrelevant.³⁸ It is possible that the future battlefield will be “truly seamless...with vastly fewer boundaries and coordination lines required to effectively synchronize combat power and prevent fratricide.”³⁹ If this truly is the case, consolidation of fires functions within the JFFCC offers the most viable option for applying focused, timely fires, while limiting fratricide within and outside of the entire Joint Operating Area (JOA).

The JFFC is well positioned both geographically (at JFC HQ), and organizationally to “translate the JFC’s intent and concept of operations into clear, workable targeting guidance and priorities.”⁴⁰ Many airpower advocates see the JFFC as an attempt by the land component to co-op a portion of the JFACC’s authority, and the JFFCC as redundant to the AOC that now coordinates air targeting and attack alone.⁴¹ If we are to be a success as a joint force, we must have the ability to expeditiously decide, detect, deliver and assess (D3A) all fires. The JFFC is the most logical choice to do so.

Joint Force Fires Coordination Center

The first step in making fires joint is establishment of a permanent Joint Force Fires Coordination Center (JFFCC) as a mandatory staff section within the J-3, led by a Joint Force Fires Coordinator (JFFC), located in all JTF and CINC headquarters. A proposed Table of Organization for a JFFCC, with recommended ranks for leadership is contained

in Appendix B. The JFFC would be the “central coordinator responsible for fully integrating the network of systems and technologies operated by the service components to achieve the JTF Commander’s stated objectives for operational fires.”⁴² Currently all of the services have organizations which coordinate air and ground fires. Some have even established effective liaison organizations, such as the Army’s Battlefield Coordination Detachment (BCD), which co-locates with the JFACC’s Air Operations Center in order to coordinate deep operations, but why isn’t this done at the JTF level? The intent is to consolidate many of these overlapping functions in the JFFCC. The JFFCC would “consist of representatives from the various service components including Special Operations Command, be linked to the Joint Intelligence Cell (JIC) for all sources of target acquisition data, and maintain continuous communication links with the Deep Operations Coordination Centers (DOCC), Navy/Marine operations centers,”⁴³ and the AOC. “The goal will be to accept target acquisition data and, based on parameters established by the JFC, coordinate attack of selected targets. Following the attack, the JFFC will coordinate battle damage assessment and direct reattacks as required.”⁴⁴ Throughout the JFC’s campaign, the JFFC will be capable of coordinating decisive unified combat power against enemy high value targets throughout the operational depth of the battlefield.

The JFFC's duties "should migrate toward synchronization of maneuver and interdiction. Over the phases of an operation, the JFFC would assist in formulating and disseminating JFC intent and be an advisor on all fires.”⁴⁵ The JFFC would be the JFC's "primary assistant and subject matter expert in the application of joint fires...advise the commander concerning what fires can and cannot accomplish in the theater...make

recommendations to the JFC pertaining to apportionment of assets...and facilitate the joint targeting board and develop supporting fire plans."⁴⁶ One of his key responsibilities would be to oversee the JTCB and "to balance component desires concerning deep attack and air interdiction to achieve the JFC's intent".⁴⁷ The JFFC may be from any service or component depending largely on the JFC's campaign plan. In either case, his deputy should be from another service in order to ensure a balanced fires perspective within the JFC's fires cell.

The JFFCC would be subdivided into three cells: Close Fires Cell, Deep Fires Cell, and Strategic Fires Cell. The respective cells would perform the tasks listed in Figure 1.

Targeting	<ul style="list-style-type: none"> • In coordination with Joint Intelligence Center, and component liaisons, conducts targeting for entire JOA. • Review targeting information as it pertains to JFC targeting guidance, objectives, and priorities, and ensures implementation irrespective of the platform with which it will eventually be engaged
Joint Targeting Coordination Board (JTCB)	<ul style="list-style-type: none"> • JFFC serves as Deputy Chairman of the JTCB. (Deputy JFC serves as chairman). • Develop role, functions, and agenda of JTCB • Eliminate duplication and prioritize targets • Coordinate with higher, adjacent, and subordinate fires cells to ensure no "gaps" are within the JOA • Produce the Operation Plan Joint Target List (OPLAN JTL) Annex and the Joint Integrated Prioritized Target List (JIPTL) • Senior member of each respective fires cell serves as an advocate for targeting and fires requirements within their area (Close, Deep, Strategic). • Disseminating targeting and FSCMs data, clarifying the commander's intent and guidance, integrating information operations targeting, and establishing SOPs and standards regarding targeting or joint fires coordination.⁴⁸
Weaponneering	<ul style="list-style-type: none"> • Weaponneers targets into the following general categories: non-lethal, air, ground surface, or naval surface. • Ensure sufficient fires assets are allocated throughout the JOA, iaw JFC's intent • Conduct battle damage assessment, and direct re-attacks as required. • Mass fires on the JFC's high payoff targets. • Conduct counterfire against enemy fires attacks.

Figure 1: Joint Force Fires Coordination Center Tasks

Of all these tasks, one of the most challenging the JFFCC must carry out will be weaponeering, which must be maintained at a “macro-level view of the area of responsibility (AOR)/joint operations area (JOA) and ensures targeting nominations are consistent with the JFC’s campaign plan. This view encompasses *all* component operations and *all* joint force targeting (not solely air targeting)”.⁴⁹ The intent is to “maintain a campaign-level perspective and not involve itself at levels of detail best left to the component commanders”.⁵⁰ The JFFC will not write master air attack plans, develop ATOs, develop AGMs, or make apportionment decisions. Components will continue to bear the primary responsibility for execution.⁵¹ Many airpower advocates have resisted giving up this task because they consider it integral to ATO development.⁵² However, having the JFFC conduct targeting and broad weaponeering (non-lethal, air, surface, naval surface) will actually reduce redundancy and improve efficiency within the JOA while reducing the number of sorties required because the JFFC will be able to tap into all fires assets within the JOA, not simply airframes.

Likewise improvements in “digital information management systems...and service component target acquisition systems”⁵³ now make it possible to rapidly conduct coordination between headquarters. Two of the most significant systems currently in use are the Advanced Field Artillery Tactical Data System (AFATDS) and the Contingency Theater Automated Planning System (CTAPS). The Army, Marine Corps, and Navy have fielded versions of AFATDS, used primarily for surface based fires coordination and planning, and the system has demonstrated an ability to interface with CTAPS, the primary vehicle for ATO generation.⁵⁴ With advances in information warfare

technologies “even more capable systems will serve as the basis for creating the seamless unified battlespace.”⁵⁵

Streamlining the targeting process will only serve to expedite the ATO process which currently works well for “attack of strategic targets” and “relatively stationary operational level targets”, but does not have the flexibility to react to “mobile operational targets such as formations of armored units. Attacks planned against these mobile type targets, even as little as 24 hours in advance are unlikely to succeed. Against tactical level targets chances of success diminish even further.”⁵⁶ A JFFCC utilizing all the assets available within the JOA can more easily flex to expeditiously attack and destroy these targets of opportunity.

The JFFCC will be subdivided into three cells. The first cell, the Close Fires Cell, would have the primary responsibility for coordinating and allocating fires within the close fight, an area currently controlled primarily by the Joint Force Land Component Commander (JFLCC) and the Joint Rear Area Commander (JRAC). This does not mean that the cell would subsume the responsibilities of the JFLCC’s or JRAC’s Fires Cells. The Close Cell’s primary responsibility would be to ensure coordination within the AO and ensure adequate fires are allocation throughout the JFC’s JOA to prosecute the “near fight”, while weighing assets used now versus later. Care must be taken that the Close Coordinator does not blithely remove or task assets from units required to prosecute the near fight (i.e., Army and Marine aviation are part and parcel to their respective forces; removing their air assets may seriously degrade these forces’ ability to accomplish the JFC’s mission). The Close Fires Cell serves as the chief advocate for fires requirements within the close fight, ensures inclusion of close targets on the JTL and JIPTL, expedites

cross boundary fires coordination, and serves on the JTCB. The Close Fires Cell will also be used to mass fires against high payoff targets and counterfire targets.

This cell also would deal with the issue of Close Air Support (CAS), which air advocates view as, “the least efficient use of aerospace assets” and as “in-extremis air support...to ensure survivability of ground forces”,⁵⁷ and ground advocates see as integral to their ability to fight and win their portion of the JFC’s campaign. This cell would ensure sufficient CAS is provided, weighed against the phase of the operation and needs throughout the JOA. Establishment of this cell would also re-energize CAS doctrine and training, which is floundering as noted in Operation Enduring Freedom where, “despite increasing use of precision-guided weapons, problems in close air support persist. Experienced pilots and ground controllers say this is largely due to insufficient training, inadequate communications and night vision gear and outdated tactics and doctrine”.⁵⁸

The Deep Fires Cell would have primary responsibility for coordination of fires in the deep battle. This area has been the most contentious as both the JFLCC and the JFACC lay claim to it; the JFLCC as his area of interest, the JFACC as his air interdiction area. Establishment of the Deep Fires Cell would ensure deconfliction of land and air components, while ensuring proper targeting and allocation of assets within the area, both for shaping operations and interdiction. Likewise, the intent would be not to strip away assets required to prosecute the campaign from components, but to ensure there is coordination and balance between interdiction and shaping operations, and eliminate gaps in fires coverage that any enemy could exploit.⁵⁹

The Strategic Fires Cell would be linked with the fires cell of the respective combatant commander in whose region the JTF is operating (should one exist). The intent, like the other two cells would be to ensure a unity of effort and accomplishment of the commander's concept of fires in execution. The primary prosecutor of fires in this area would be the JFACC, as "clearly, strategic attack is the purview of the JFACC," both in target acquisition and attack.⁶⁰ Just as the Close Fires Cell serves as an advocate for CAS, so will the Strategic Fires Cell serve as an advocate for prioritizing, safeguarding, and integrating those assets best qualified to serve as weapons of strategic attack.

Each component (functional and service) would provide liaison officers to the JFFCC in order to articulate the individual components capabilities, limitations, and desires. This organizational concept will provide a greater voice to all components while ensuring unity of effort and, most importantly, that the JFC's Concept of Fires is properly articulated into execution.

Conclusion

Increasing advances in target acquisition, command and control, and precision/range of fires systems have both extended and compressed the battlefield. The JFC can now reach out further and more accurately than ever before. The proliferation of long-range, precision, fires systems within his components necessitate a change in joint doctrine. The current doctrine, which places primary responsibility for targeting, weaponeering, and allocation with the JFACC, with the option of inserting a JFE under the J-3, clearly is not a workable solution in any environment where the forces involved are not "air-pure", and even then does a poor job of integrating all fires assets with maneuver to create the desired synergistic effect.

The JFACC's focus is on the air operation in support of the JFC's overall campaign. He will more often than not be geographically separated from the JFC and the JFC's primary planners, making synchronization of maneuver and fires difficult at best. The responsibility for targeting has migrated to the JFACC primarily because of learning the wrong lessons during Operation Desert Storm, and because the Air Force has in fact created the necessary structure and architecture to conduct joint air operations. However, the JFACC's focus on air operations can and has "pigeon-holed" the targeting process to focus solely on targets that can be attacked by air assets. He cannot properly coordinate all the JFC's fires, but someone must.

As the battlefield grows more seamless and weapons systems extend in range, establishment of a JFFCC is a logical evolution. Having one entity serving as the chief fires advocate for the joint force is the only workable, and truly joint solution to this doctrinal dilemma. The JFFC, located within the J-3, can effectively integrate fires with maneuver, and respond quickly to rapidly changing situations. This option will require an investment in personnel, C2 architecture, and training to support integration. However, in light of the 2001 Quadrennial Defense Review recommendation to establish standing joint task force headquarters⁶¹, the time seems ripe to do so. The JFFCC is the key to synchronizing joint maneuver and fires, and winning with combined arms and joint forces in the future.

Appendix A

FIRES CAPABILITIES

INDIRECT FIRE			
WEAPON SYSTEM	WEAPONS RANGE	WEAPONS	SERVICE
M26 ROCKET (MLRS)	BASIC MLRS ROCKET EACH RD DISPENSES 644 M77 DPICM MUNITIONS ON TGT AREA ATTACK RANGE BTWN 10-32.5 KM	MLRS	USA
		ATACMS	USA
		HIMARS	USA, USMC
EXTENDED RANGE GUIDED ROCKET (ERG)	EXTENDS RANGE OF MLRS EACH RD CONTAINS 409 M85 DPICM BTWN 15-60 KM	MLRS	USA
		ATACMS	USA
		HIMARS	USA, USMC
MLRS SMART TACTICAL ROCKET (MSTAR)	EXTENDS RANGE OF MLRS EACH RD CONTAINS 3 TGW BTWN 15-60 KM SMART MUNITION WARHEAD USED FOR HIGH PAYOFF TGTS/COUNTERFIRE	MLRS	USA
		ATACMS	USA
		HIMARS	USA, USMC
ATACMS BLOCK I	M39 WARHEAD USED FOR FIXED/SEMI-FIXED TGT BTWN 25-165 KM EACH RD CONTAINS 950 M74 APAM MUNITIONS	ATACMS	USA
ATACMS BLOCK IA	INCREASED ACCURACY DUE TO GPS RECEIVER BTWN 100-300 KM EACH RD CONTAINS 310 M74 APAM SUBMUNITIONS	ATACMS	USA
ATACMS BLOCK II	EMPLOYS BRILLIANT ANTI-ARMOR SUBMUNITIONS (BAT) AGAINST MOVING ARMOR FORMATIONS BTWN 35-140 KM 13 BAT SUBMUNITIONS PER RD	ATACMS	USA
ATACMS BLOCK IIA	EMPLOYS BRILLIANT ANTI-ARMOR SUBMUNITIONS (BAT) AGAINST STATIONARY TGTS BTWN 100-300 KM 6 IMPROVED BAT SUBMUNITIONS (P3I) PER RD	ATACMS	USA
155MM ARTILLERY	HIGH EXPLOSIVE (HE): 18,100 KM	CRUSADER 155MM(SP)	USA
	SMOKE: 22, 600 KM		
	ROCKET ASSISTED HE: 30,000 KM	PALADIN (155MM(SP)	USA
	DPICM: 17,500 KM		
	DPICM(BB): 28,400 KM	M198 (155MM(T))	USA, USMC
	SADARM: 22, 500 KM		
	COPPERHEAD: 16,400 KM		
105MM ARTILLERY	RAAMS: 17,700 KM	M119 (105MM(T))	USA
	ADAMS: 17,700 KM		
	HIGH EXPLOSIVE (HE): 11,500 KM		
	HIGH EXPLOSIVE (HE): 14,000 KM		
	SMOKE: 11,500 KM		
60MM MORTAR	ROCKET ASSISTED HE: 19,500 KM	M224	USA, USMC
	APICM: 11,500 KM		
	BEEHIVE: 12,400 KM		
81MM MORTAR	HIGH EXPLOSIVE (HE): 5700M	M252	USA, USMC

ACQUISITION SYSTEMS		
WEAPON SYSTEM	WEAPONS	SERVICE
AN/TPQ-37 WLR	ACQUIRE ARTY/MORTARS: 30,000KM ROCKETS: 50,000KM	USA
AN/TPQ-36 WLR	ACQUIRE ARTY/MORTARS: 12,000M ROCKETS: 24,000KM	USA, USMC
SATELITE IMAGERY/IPDS/TRAC	RECEIVES, PROCESSES, AND EXPLOITS DIGITAL IMAGERY FROM NATIONAL AND THEATER SYSTEMS	USA
GUARDRAIL	INTEGRATES IGRV (COMINT) AND AQL (ELINT) INTO SINGLE SIGINT SYSTEM; RANGE: 250 KM FROM AIRCRAFT TO DATA LINK	USA
PIONEER UAV	LIVE TV VIDEO AND FUR REAL-TIME TO J-STARS, GSM AND PIONEER GROUND CONTROL STATION. RANGE: 140 KM	USA, USAF
SHORT RANGE UAV	LIVE TV VIDEO AND FUR REAL-TIME TO J-STARS, GSM AND PIONEER GROUND CONTROL STATION. RANGE: 200+ KM	USA, USAF, USMC
J-STARS	NEAR REAL TIME TO GSM, NEAR REAL TIME TO GSM, 300 KM FROM AIRCRAFT TO GSM	USAF
J-STARS GSM	RECEIVE, PROCESS, AND CORRELATE SENSOR AND MULTI SOURCE DATA FROM J-STARS, OV-1D, SLAR, AND UAV	USAF
TLQ-17	HF/VHF/ECM, HF/VHF INTERCEPT, RANGE: 30 KM	USA
TRQ-32	HF/VHF/UHFINTERCEPT, VHF DF WHEN NETTED WITH OTHER TRQ-32'S COMINT, RANGE: 30 KM	USA
AH-64A APACHE	ARMED RECON, TARGET LOCATION, AND LIGHT ATTACK; RANGE: 15 KM	USA
OH-58D KIOWA WARRIOR	ARMED RECON, TARGET LOCATION, AND LIGHT/HEAVY ATTACK; RANGE: NA	USA
EH-60A QUICKFIX	HF/VHF INTERCEPT, HF/VHF ECM, VHF DF, RANGE: 30 KM EA, 50 KM ES	USA

AIR SUPPORT ASSETS			
WEAPON SYSTEM	WEAPONS CAPABILITIES	PAYLOAD	SERVICE
A-10	30MM SEVEN BARRELL GATTLING GUN, AIM-9 SIDEWINDER MISSILE, MAVERICK AIR-SURFACE MISSILES, GENERAL PURPOSE BOMBS, CLUSTER MUNITIONS	16,000 LBS	USAF
F-16	20MM SIX-BARRELL CANNON, AIM-9 SIDEWINDER MISSILE, AIM-7 SPARROW MISSILES, HARM MISSILES, PRECISION GUIDED AIR-TO-SURFACE MISSILES, GENERAL PURPOSE BOMBS, CLUSTER BOMBS	12,000 LBS	USAF
F-117A	PRECISION GUIDED MUNITIONS	5000 LBS	USAF
B-52	51,500 LBS OF BOMBS OR CLUSTER MUNITIONS, 12 AIR-LAUNCHED CRUISE MISSILES, 8 HARPOON ANTISHIP MISSILES	51,500 LBS	USAF
B-1B	84,500 LBS OF BOMBS, UP TO 24 2000 LB BOMBS, UP TO 8 AIR-LAUNCHED CRUISE MISSILES	84,500 LBS	USAF
B-2A	80,500 LBS OF PRECISION GUIDED BOMBS	80,500 LBS	USAF
AC-130H/U	TWO FIXED 20MM VULCAN CANNONS, ONE TRAINABLE 40MM CANNON, ONE TRAINABLE 105MM HOWITZER	NA	USAF/SOF
AH-64A APACHE	2.75 INCH ROCKETS, RANGE 9300M , MAX LOAD: 76 30MM CANNON, RANGE: 3000M , MAX LOAD 1200 HELLFIRE MISSILES, RANGE: 5000M , MAX LOAD: 16	NA	USA
OH-58D KIOWA WARRIOR	2.75 INCH ROCKETS, RANGE 9300M , MAX LOAD: 14 .50CAL MG, RANGE: 2000M , MAX LOAD 513 HELLFIRE MISSILES, RANGE: 5000+M , MAX LOAD: 4 STINGER MISSILES, RANGE: 5000+M , MAX LOAD: 4	NA	USA

NAVAL SURFACE FIRE SUPPORT			
WEAPON SYSTEM	WEAPONS CAPABILITIES	PAYLOAD	SERVICE
DESTROYERS	TWO: 5"54 NAVAL GUNS 660 RDS PER GUN 23 KM (29 KM RAP)	NA	USN
GUIDED MISSILE DESTROYER	1 OR 2: 5"54 NAVAL GUNS 600 RDS PER GUN 23 KM (29 KM RAP)	NA	USN
GUIDED MISSILE CRUISER	1 OR 2: 5"54 NAVAL GUNS 1200 ROUNDS 23 KM (29 KM RAP)	NA	USN
ERGM	RANGE: 13-63 NM; XM-80 DPICM SUBMISSIONS, GPS ACQUISITION, HIGH ANTI-JAM DESIGN (STILL IN DEVELOPMENT)	NA	USN
TLAMS	SURFACE SHIP/SUBMARINE LAUNCHED CRUISE MISSILE; RANGE: 870 NM, SUBSONIC: ABOUT 550 MPH	1000 POUNDS OF EXPLOSIVE OR CONV. SUBMUN. DISPENSER	USN

NAVAL AIR				
WEAPON SYSTEM	WEAPONS CAPABILITIES	PAYLOAD	OPERATES FROM	SERVICE
F/A-18	SIDEWINDER AND SPARROW MISSILES, 20MM CANNON, HARM MISSILE, GENERAL PURPOSE BOMBS, ROCKETS, MINES, WALLEYE, MAVERICK, HARPOON MISSILES	16, 000 LBS	OPERATES FROM AIRCRAFT CARRIER OR EXPEDITIONARY AIRFIELD	USN, USMC
AV-8B	8000 LBS OF EXTERNAL ORDNANCE, 25MM INTERNAL CANNON	8000 LBS	OPERATES FROM AMPHIBIOUS SHIP OR EXPEDITIONARY AIRFIELD	USMC
F-14	AIM-54 PHOENIX MISSILE, AIM-7 SPARROW MISSILE, AIM-9 SIDEWINDER MISSILE, AIR-TO- GROUND PRECISION STRIKE ORDNANCE, AND ONE M61A1/A2 VULCAN 20MM CANNON.	13,00 LBS	OPERATES FROM AIRCRAFT CARRIER	USN
EA-6B	JAMS ENEMY EARLY WARNING, TARGET ACQUISITION, TARGET TRACKING, AND MISSILE GUIDANCE RADARS, CAN CARRY UP TO FOUR HARM MISSILES	NA	OPERATES FROM AIRCRAFT CARRIER OR EXPEDITIONARY AIRFIELD	USMC
AH-1W	TOW AND HELLFIRE MISSILES, 5 INCH AND OR 2.75 ROCKETS, 20MM CANNON, FUEL AIR EXPLOSIVES	NA	OPERATES FROM AMPHIBIOUS SHIP OR EXPEDITIONARY AIRFIELD	USMC

ADA			
WEAPON SYSTEM	WEAPONS CAPABILITIES	PAYLOAD	SERVICE
AVENGER	DAY/NIGHT CAPABILITY, ACQUISITION RANGE IN EXCESS OF 10 KM WITH 360 DEGREE COVERAGE, FLIR, LASER RANGE FINDER, IFF, 8 STINGER MISSILES(RANGE 4K), .50 CAL MG	NA	USA, USMC
STINGER	IR HOMING, FIRE AND FORGET, 2 MAN TEAMS, 6 MISSILES PER TEAM	NA	USA, USMC

NON-LETHAL			
WEAPON SYSTEM	WEAPONS CAPABILITIES	PAYLOAD	SERVICE
TLQ-17	JAMMER TRANSMITS ON BANDS FROM 1.5 TO 74.99 MHZ TO A RANGE OF 30 K	NA	USA
EH-60A QUICKFIX	INTERCEPT (1.5 TO 150 MHZ), DIRECTION FINDER (20-76 MHZ), JAMMER (20-80 MHZ), STANDOFF JAMMING 15-30 KM	NA	USA

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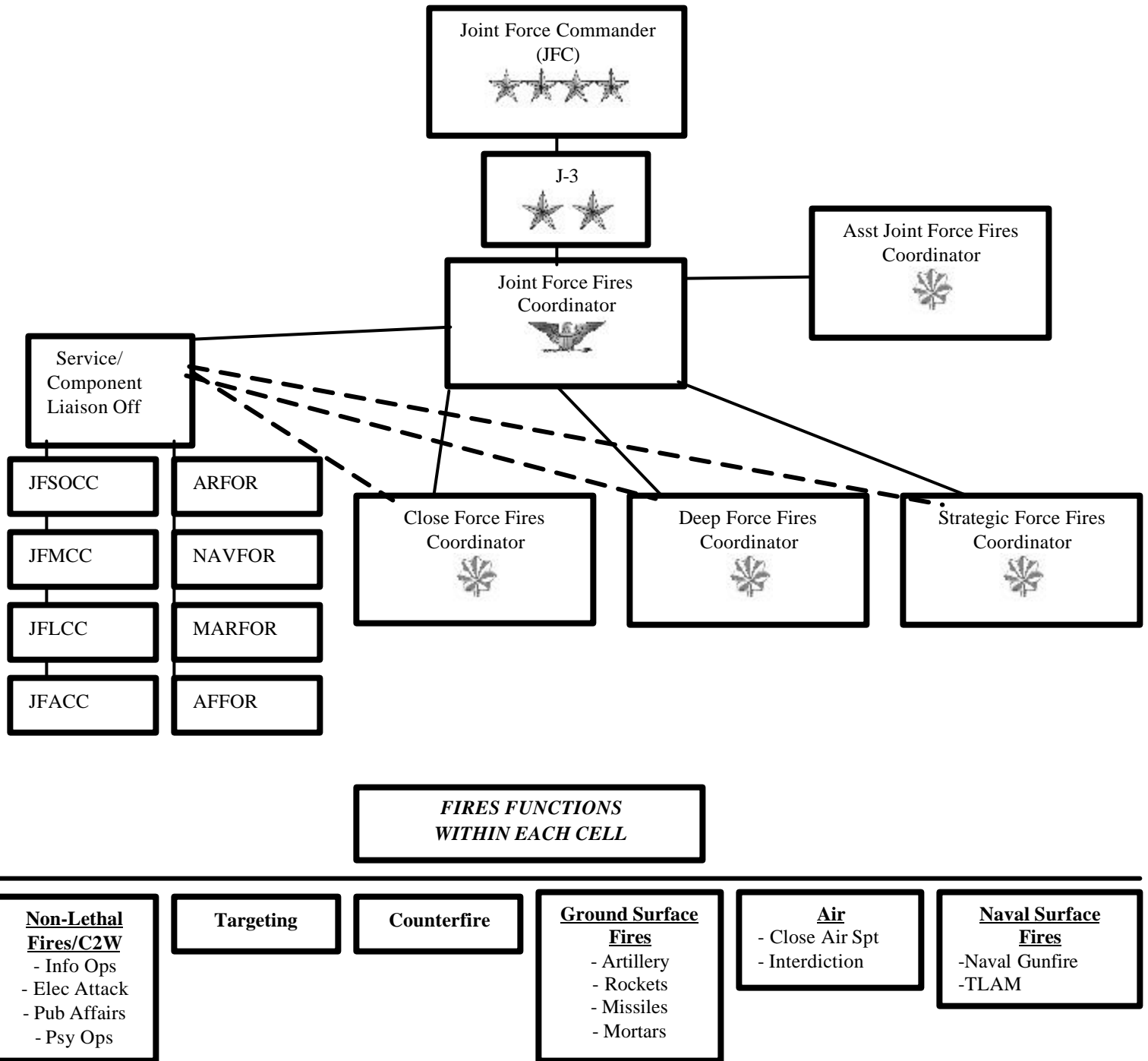
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Appendix B Proposed Joint Force Fires Coordination Center



Appendix C

Selected Glossary

air interdiction — Air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required. (JP 1-02)

air-launched ballistic missile — A ballistic missile launched from an airborne vehicle. (JP 1-02)

air offensive — Sustained operations by strategic and/or tactical air weapon systems against hostile air forces or surface targets. (JP 1-02)

air operations center — The principal air operations installation from which aircraft and air warning functions of combat air operations are directed, controlled, and executed. It is the senior agency of the Air Force Component Commander from which command and control of air operations are coordinated with other components and Services. Also called **AOC**. (JP 3-56.1)

air support — All forms of support given by air forces on land or sea. (JP 1-02)

air tasking order — A method used to task and disseminate to components, subordinate units, and command and control agencies projected sorties, capabilities and/or forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, etc., as well as general instructions. Also called **ATO**. (JP 3-56.1)

allocation (air) — The translation of the air apportionment decision into total numbers of sorties by aircraft type available for each operation or task. (JP 3-17)

area of influence — A geographical area wherein a commander is directly capable of influencing operations by maneuver or fire support systems normally under the commander's command or control. (JP 1-02)

area of interest — That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory to the objectives of current or planned operations. This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. Also called **AOI**. See also **area of influence**. (JP 2-03)

area of operations — An operational area defined by the joint force commander for land and naval forces. Areas of operation do not typically encompass the entire operational area of the joint force commander, but should be large enough for component commanders to accomplish their missions and protect their forces. Also called **AO**. See also **area of responsibility**; **joint operations area**; **joint special operations area**. (JP 5-0)

area of responsibility — 1. The geographical area associated with a combatant command within which a combatant commander has authority to plan and conduct operations. 2. In naval usage, a predefined area of enemy terrain for which supporting ships are responsible for covering by fire on known targets or targets of opportunity and by observation. Also called **AOR**. (JP 0-2) **area of separation** — See **buffer zone**. Also called **AOS**. See also **peace operations**. (JP 3-07.3)

close air support — Air action by fixed- and rotary-wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces. Also called **CAS**. See also **air interdiction**; **air support**; **immediate mission request**; **preplanned mission request**. (JP 3-0)

decide, detect, deliver, and assess (D3A) ---- Army and Marine Corps targeting service doctrine. It traditionally defines the targeting process as having four steps: **DECIDE—DETECT—DELIVER—ASSESS (D3A)** At first glance, when compared to the joint targeting process, the Army/Marine Corps service targeting process appears quite different. However, although labeled with different terms, the Army/Marine Corps service targeting process incorporates *the same fundamental functions as the joint targeting process*. The functions of the Army/Marine Corps targeting process can be easily translated to the functions of the joint targeting process. Note that D3A functions flow fluidly across the six functions of the joint targeting process. (FM 90-36, MCRP 3-16.1F, NWP 2-01.11, AFJPAM 10-225)

fires — The effects of lethal or non-lethal fires. (JP 3-09)

fire support— Fires that directly support land, maritime, amphibious, and special operation forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. See also fires. (JP 3-09)

fire support coordinating measure — A measure employed by land or amphibious commanders to facilitate the rapid engagement of targets and simultaneously provide safeguards for friendly forces. See also fire support coordination. (JP 3-0)

fire support coordination center — A single location in which are centralized communications facilities and personnel incident to the coordination of all forms of fire support. Also called FSCC. See also fire; fire support; fire support coordination; support; supporting arms coordination center. (JP 3-09.1)

fire support coordination line — A fire support coordinating measure that is established and adjusted by appropriate land or amphibious force commanders within their boundaries in consultation with superior, subordinate, supporting, and affected commanders. Fire support coordination lines (FSCLs) facilitate the expeditious attack of surface targets of opportunity beyond the coordinating measure. An FSCL does not divide an area of operations by defining a boundary between close and deep operations or a zone for close air support. The FSCL applies to all fires of air, land, and sea-based weapon systems using any type of ammunition. Forces attacking targets beyond an FSCL must inform all affected commanders in sufficient time to allow necessary reaction to avoid fratricide. Supporting elements attacking targets beyond the FSCL must ensure that the attack will not produce adverse effects on, or to the rear of, the line. Short of an FSCL, all air-to-ground and surface-to-surface attack operations are controlled by the appropriate land or amphibious force commander. The FSCL should follow well defined terrain features. Coordination of attacks beyond the FSCL is especially critical to commanders of air, land, and special operations forces. In exceptional circumstances, the inability to conduct this coordination will not preclude the attack of targets beyond the FSCL. However, failure to do so may increase the risk of fratricide and could waste limited resources. Also called FSCL. See also fire support; fires. (JP 3-09)

deep supporting fire – Fire directed on objectives not in the immediate vicinity of our forces, for neutralizing and destroying enemy reserves and weapons, and interfering with enemy command, supply, communications, and observations. (JP 1-02)

high-payoff target — A target whose loss to the enemy will significantly contribute to the success of the friendly course of action. High-payoff targets are those high-value targets, identified through wargaming, that must be acquired and successfully attacked for the success of the friendly commander's mission. Also called **HPT**. (JP 3-09)

high-value target — A target the enemy commander requires for the successful completion of the mission. The loss of high value targets would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest. Also called **HVT**. (JP 3-09)

joint air operations — Air operations performed with air capabilities/forces made available by components in support of the joint force commander's operation or campaign objectives, or in support of other components of the joint force. (JP 3-56.1)

joint air operations center — A jointly staffed facility established for planning, directing, and executing joint air operations in support of the joint force commander's operation or campaign objectives. Also called JAOC. See also joint air operations. (JP 3-56.1)

joint targeting process -- The joint targeting process determines the employment of military force to achieve a desired objective. It integrates capabilities of national assets, geographic combatant commands (that is, unified combatant commands), subordinate joint force, multinational, and component commands, all of which possess varying capabilities and requirements. The joint targeting process is described as a "cyclical process" with sequential *phases*. However, the joint targeting process is really a continuously operating series of closely related, interacting, and interdependent *functions*. The six functions/phases are—**commander's objectives and guidance, target development, weaponeering assessment, force application, execution planning/force execution, and combat assessment (CA)**. (FM 90-36, MCRP 3-16.1F, NWP 2-01.11, AFJPAM 10-225)

joint fires — Fires produced during the employment of forces from two or more components in coordinated action toward a common objective. See also fires. (JP 3-09)

joint fires element — An optional staff element that provides recommendations to the J-3 to accomplish fires planning and synchronization. Also called JFE. See also fire support; joint fires. (JP 3-09)

joint fire support— Joint fires that assist land, maritime, amphibious, and special operations forces to move, maneuver, and control territory, populations, and key waters. See also fire support; joint fires. (JP 3-09)

joint force — A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single joint force commander. See also joint force commander. (JP 3-0)

joint force air component commander —The joint force air component commander derives authority from the joint force commander who has the authority to exercise operational control, assign missions, direct coordination among subordinate commanders, redirect and organize forces to ensure unity of effort in the accomplishment of the overall mission. The joint force commander will normally designate a joint force air component commander. The joint force air component commander's responsibilities will be assigned by the joint force commander (normally these would include, but not be limited to, planning, coordination, allocation, and tasking based on the joint force commander's apportionment decision). Using the joint force commander's guidance and authority, and in coordination with other Service component commanders and other assigned or supporting commanders, the joint force air component commander will recommend to the joint force commander apportionment of air sorties to various missions or geographic areas. Also called JFACC. See also joint force commander. (JP 3-0)

joint force commander — A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. **Also called JFC.** (JP 0-2)

joint force land component commander — The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of land forces, planning and coordinating land operations, or accomplishing such operational missions as may be assigned. The joint force land component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. The joint force land component commander will normally be the commander with the preponderance of land forces and the requisite command and control capabilities. Also called JFLCC. (JP 3-05)

joint force maritime component commander — The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of maritime forces and assets, planning and coordinating maritime operations, or accomplishing such operational missions as may be assigned. The joint force

maritime component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. The joint force maritime component commander will normally be the commander with the preponderance of maritime forces and the requisite command and control capabilities. **Also called JFMCC.** (JP 3-05)

joint force special operations component commander — The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of special operations forces and assets, planning and coordinating special operations, or accomplishing such operational missions as may be assigned. The joint force special operations component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. The joint force special operations component commander will normally be the commander with the preponderance of special operations forces and the requisite command and control capabilities. **Also called JFSOCC.** (JP 3-05)

joint integrated prioritized target list — A prioritized list of targets and associated data approved by a joint force commander and maintained by a joint task force. Targets and priorities are derived from the recommendations of components in conjunction with their proposed operations supporting the joint force commander's objectives and guidance. **Also called JIPTL.** (JP 3-56.1)

joint intelligence center (JIC)— The intelligence center of the combatant command headquarters. The joint intelligence center is responsible for providing and producing the intelligence required to support the combatant commander and staff, components, subordinate joint forces and elements, and the national intelligence community. **Also called JIC.** (JP 2-0)

Deep Operations Coordination Cell --- The ARFOR may deploy a DOCC into the AO. The DOCC is a C2 node that plans, coordinates, and manages deep operations, to include surface TCT attacks, within the land force commander's AO. The DOCC develops deep attack plans based on identified HPTs. The DOCC selects attack assets based on several factors including the location of attack assets with respect to targets, the operational status of attack assets, target ranges, the number and type of missions in progress, munitions available, the enemy air defense threat, and the accuracy of the targeting acquisition data. (FM 90-36, MCRP 3-16.1F, NWP 2-01.11, AFJPAM 10-225)

target — 1. A geographical area, complex, or installation planned for capture or destruction by military forces. 2. In intelligence usage, a country, area, installation, agency, or person against which intelligence operations are directed. 3. An area designated and numbered for future firing. 4. In gunfire support usage, an impact burst which hits the target. See also **objective area.** (JP 1-02)

targeting ---1. The process of selecting targets and matching the appropriate response to them, taking account of operational requirements and capabilities. 2. The analysis of enemy situations relative to the commander's mission, objectives, and capabilities at the commander's disposal, to identify and nominate specific vulnerabilities that, if exploited, will accomplish the commander's purpose through delaying, disrupting, disabling, or destroying enemy forces or resources critical to the enemy. (JP 1-02)

target list – The listing of targets maintained and promulgated by the senior echelon of command; it contains those targets that are to be engaged by supporting arms, as distinguished from a "list of targets" that may be maintained by any echelon as confirmed, suspected, or possible targets for informational and planning purposes. See also **list of targets.** (JP 1-02)

target acquisition — The detection, identification, and location of a target in sufficient detail to permit the effective employment of weapons. Also called **TA.** See also **target analysis.** (JP 1-02)

weapon engineering — The process of determining the quantity of a specific type of lethal or nonlethal weapons required to achieve a specific level of damage to a given target, considering target vulnerability, weapons effect, munitions delivery accuracy, damage criteria, probability of kill, and weapon reliability. (JP 2-0)

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- ³⁴ Joint Warfighting Center, EX-1.
- ³⁵ Joint Warfighting Center, EX-7.
- ³⁶ Rice, 22.
- ³⁷ Batschelet, 33.
- ³⁸ Rice, 33-34.
- ³⁹ Ibid, 34.
- ⁴⁰ Joint Warfighting Center, EX-8.
- ⁴¹ Grant, 6.
- ⁴² Rice, 31.
- ⁴³ Rice, 32.
- ⁴⁴ Ibid, 32.
- ⁴⁵ Joint Warfighting Center, EX-4 – EX-5.
- ⁴⁶ Rice, 31.

⁴⁷ Ibid, 31.

⁴⁸ Joint Warfighting Center, EX-4.

⁴⁹ Air, Land, Sea Application Center, I-11.

⁵⁰ Air, Land, Sea Application Center, I-11.

⁵¹ Air, Land, Sea Application Center, I-11.

⁵² Joint Warfighting Center, EX-7.

⁵³ Rice, 25-28.

⁵⁴ Ibid, 25-28.

⁵⁵ Ibid, 25-28.

⁵⁶ Batschelet, 30.

⁵⁷ Stephen M. Seay, Joint Fire Support Doctrine – Consensus Please!, (US Army War College, Carlisle Barracks, PA: 27 March 1992), 20-22.

⁵⁸ Davis Wood, “Close Air Support Missions Dangerous and Often Ineffective Insiders Say”, at Newshouse.com, <http://www.ebird.dtic.mil/Nov2001/e20011130close.htm> [November 29, 2001], 1.

⁵⁹ Batschelet, 33.

⁶⁰ Rice, 12.

⁶¹ Department of Defense, Quadrennial Defense Report, (Washington, DC: September 30, 2001), 33.

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